

CLAIMS:

- 1) A shopping receptacle, the shopping receptacle being adapted to receive and retain a product item, the product item having an interface surface associated therewith, the interface surface having disposed thereon or therein coded data including a plurality of coded data portions, each coded data portion being indicative of an identity of the product item, wherein the receptacle comprises:
  - (a) a receptacle body adapted to receive and retain the product item and having an opening through which the product item may be placed within the receptacle body; and,
  - (b) a sensing device adapted to:
    - (i) emit at least one scanning beam across the opening of the receptacle body;
    - (ii) sense at least one coded data portion on the interface surface of the product item as the product item is positioned in the receptacle opening; and
    - (iii) generate, using the at least one sensed coded data portion, indicating data indicative of the identity of the product item.
- 2) The receptacle of claim 1, wherein the sensing device comprises:
  - (a) a laser for emitting the at least one scanning beam, the scanning beam being directed in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch, the scanning patch being provided in the sensing region such that it exposes at least one coded data portion;
  - (b) a sensor for sensing the at least one exposed coded data portion; and
  - (c) a processor for determining, using at least some of the sensed coded data, indicating data indicative of the identity of the product item.
- 3) The receptacle of claim 1, wherein the sensing device transfers the indicating data to a computer system adapted to:
  - (a) receive the indicating data;
  - (b) generate, using the indicating data, product identity data indicative of the identity of the product item; and,
  - (c) perform, using the identity data, an action.
- 4) The receptacle of claim 3, wherein the receptacle includes a communication system for transferring data to the computer system.
- 5) The receptacle of claim 3, wherein the receptacle includes at least part of the computer system.
- 6) The receptacle of claim 3, wherein the computer is adapted to:
  - (a) associate the sensing device with the user; and,
  - (b) dissociate the sensing device and the user.
- 7) The receptacle of claim 6, wherein the computer system is adapted to, using the indicating data, add an indication of the product item to a product item list.

- 8) The receptacle of claim 7, wherein the computer system is adapted to, in response to dissociation, provide the product item list to the user.
- 9) The receptacle of claim 6, wherein the computer system is adapted to:
  - (a) receive user identity data indicative of an identity of the user;
  - 5 (b) determine, using the indicating data, sensing device identity data indicative of an identity of the sensing device; and,
  - (c) use the sensing device identity data and the user identity data to associate the sensing device with the user.
- 10) The receptacle of claim 1, wherein the user is provided with an identity card, the identity card having disposed thereon or therein coded data having a plurality of card coded data portions, each card coded data portion being indicative of an identity of the user, and wherein the sensing device is adapted to:
  - (a) sense at least one card coded data portion when the identity card is positioned in the opening; and,
  - 15 (b) generate, using the at least one sensed card coded data portion, indicating data indicative of the identity of the user and the identity of the sensing device.
- 11) The receptacle of claim 10, wherein a computer system is adapted to:
  - (a) receive indicating data from the sensing device;
  - (b) determine, using the received indicating data, product information; and,
  - 20 (c) transfer the product information to the receptacle, the receptacle being responsive to the product information to display the product information to the user on a display.
- 12) The receptacle of claim 1, wherein the sensing device is adapted to:
  - (a) select an interaction mode; and,
  - (b) generate indicating data indicative of the selected interaction mode.
- 25 13) The receptacle of claim 1, wherein the receptacle is at least one of:
  - (a) a shopping trolley;
  - (b) a shopping cart; and,
  - (c) a shopping basket.
- 14) The receptacle of claim 3, wherein the action includes at least one of:
  - 30 (a) providing product information about the product item to the user;
  - (b) recording a purchase transaction indicating that the user has purchased the product item;
  - (c) recording a potential purchase transaction indicating that the user wishes to purchase the product item;
  - (d) providing comparison information to the user, the comparison information comparing
  - 35 product information about the product item with product information about another product item;

- (e) playing a game associated with the product item; and
  - (f) conducting a competition in relation to the product item.
- 15) The receptacle of claim 1, wherein the coded data is indicative of an EPC associated with the product item.
- 5 16) The receptacle of claim 1, wherein the coded data distinguishes the product item from every other product item.
- 17) The receptacle of claim 1, wherein the coded data is redundantly encoded.
- 18) The receptacle of claim 1, wherein the coded data is redundantly encoded using Reed-Solomon encoding.
- 10 19) The receptacle of claim 1, wherein the coded data is substantially invisible to the unaided eye.
- 20) The receptacle of claim 1, wherein the coded data is printed using infrared ink.
- 21) The receptacle of claim 1, wherein the coded data is provided on the interface surface coincident with visible markings representing at least one of:
- (a) product information; and,
  - 15 (b) the identity of the product item.
- 22) The receptacle of claim 1, wherein the interface surface is at least a portion of at least one of:
- (a) product item packaging;
  - (b) product item labelling;
  - (c) product manuals;
  - 20 (d) product instructions; and,
  - (e) a surface of the product item.
- 23) The receptacle of claim 1, wherein the coded data is disposed over at least one of:
- (a) substantially all of any one of:
    - (i) an entire product surface;
    - 25 (ii) packaging; and,
    - (iii) a product label;
  - (b) more than 25% of any one of:
    - (i) an entire product surface;
    - (ii) packaging; and,
    - 30 (iii) a product label;
  - (c) more than 50% of any one of:
    - (i) an entire product surface;
    - (ii) packaging; and,
    - (iii) a product label;
    - 35 (d) more than 75% of any one of:
      - (i) an entire product surface;

- (ii) packaging; and,
- (iii) a product label;

24) A method of facilitating interaction between a user and a computer system using a shopping receptacle adapted to receive and retain a product item, the product item having an interface surface associated therewith, the interface surface having disposed thereon or therein coded data including a plurality of coded data portions, each coded data portion being indicative of the identity of the product item, wherein the method includes:

(a) positioning the product item in an opening of a receptacle body which is adapted to receive and retain the product item; and,

(b) in a sensing device:

(i) sensing at least one coded data portion on the interface surface of the product item as the product item is positioned in the receptacle opening; and

(ii) generating, using the at least one sensed coded data portion, indicating data indicative of the identity of the product item; and,

(iii) transferring the indicating data to a computer system.

25) The method of claim 24, wherein the method includes, in the computer system:

(a) receiving the indicating data;

(b) determining, using the indicating data, product identity data indicative of the identity of the product item; and,

(c) performing, using the identity data, an action.

26) The method of claim 24, wherein the method includes, in the computer system:

(a) associating the sensing device with the user; and,

(b) dissociating the sensing device and the user.

27) The method of claim 24, wherein the method includes, in the computer system, using the indicating data, add an indication of the product item to a product item list.

28) The method of claim 27, wherein the method includes, in the computer system provide the product item list to the user.

29) The method of claim 26, wherein the method includes, in the computer system:

(a) receiving user identity data indicative of an identity of the user;

(b) determining, using the indicating data, sensing device identity data indicative of an identity of the sensing device; and,

(c) using the sensing device identity data and the user identity data to associate the sensing device with the user.

30) The method of claim 24, wherein the user is provided with an identity card, the identity card having disposed thereon or therein coded data having a plurality of card coded data portions,

each card coded data portion being indicative of an identity of the user, and wherein the method includes, in the sensing device:

(a) sensing at least one card coded data portion when the identity card is positioned in the opening; and,

5 (b) generating, using the at least one sensed card coded data portion, indicating data indicative of the identity of the user and the identity of the sensing device.

31) The method of claim 24, wherein the method includes, in the computer system:

(a) receiving indicating data from the sensing device;

(b) determining, using the received indicating data, product information; and,

10 (c) transferring the product information to the receptacle, the receptacle being responsive to the product information to display the product information to the user on a display.

32) The method of claim 24, wherein the method includes, in the receptacle:

(a) selecting an interaction mode; and,

(b) generating indicating data indicative of the selected interaction mode.

15 33) The method of claim 24, wherein the method includes displaying information relating to any one of the product's:

(a) cost;

(b) contents;

(c) weight;

20 (d) place of origin;

(e) manufacturer;

(f) date of manufacture;

(g) date of packaging;

(h) use-by date;

25 (i) current owner; and

(j) dimensions.

34) The method of claim 24, wherein the method includes at least one of:

(a) providing product information about the product item to the user;

(b) recording a purchase transaction indicating that the user has purchased the product item;

30 (c) recording a potential purchase transaction indicating that the user wishes to purchase the product item;

(d) providing comparison information to the user, the comparison information comparing product information about the product item with product information about another product item;

35 (e) playing a game associated with the product item; and

(f) conducting a competition in relation to the product item.

- 35) The method of claim 24, wherein the coded data is indicative of an EPC associated with the product item.
- 36) The method of claim 24, wherein the coded data distinguishes the product item from every other product item.
- 5 37) The method of claim 24, wherein the coded data is redundantly encoded.
- 38) The method of claim 24, wherein the coded data is redundantly encoded using Reed-Solomon encoding.
- 39) The method of claim 24, wherein the coded data is substantially invisible to the unaided eye.
- 40) The method of claim 24, wherein the coded is printed using infrared ink.
- 10 41) The method of claim 24, wherein the coded data is provided on the interface surface coincident with visible markings representing at least one of:
- (a) product information; and,
  - (b) the identity of the product item.
- 42) The method of claim 24, wherein the interface surface is at least a portion of at least one of:
- 15 (a) product item packaging;
- (b) product item labelling;
- (c) product manuals;
- (d) product instructions; and,
- (e) a surface of the product item.
- 20 43) The method of claim 24, wherein the coded data is disposed over at least one of:
- (a) substantially all of any one of:
    - (i) an entire product surface;
    - (ii) packaging; and,
    - (iii) a product label;
  - 25 (b) more than 25% of any one of:
    - (i) an entire product surface;
    - (ii) packaging; and,
    - (iii) a product label;
  - (c) more than 50% of any one of:
    - 30 (i) an entire product surface;
    - (ii) packaging; and,
    - (iii) a product label;
  - (d) more than 75% of any one of:
    - 35 (i) an entire product surface;
    - (ii) packaging; and,
    - (iii) a product label;